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Stormwater Utility
Preliminary Feasibility Study

City of Lodi
Columbia County, Wisconsin

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1.0 STORMWATER UTILITY OVERVIEW

1.1 INTRODUCTION

Proper stormwater management, by and large, goes unnoticed in a community. However, as with water supply and wastewater treatment, the stormwater management system is a major element of the infrastructure of any City. While flood protection is a large component of stormwater management, many more management activities occur. The City of Lodi is responsible for collecting, storing, and conveying rainfall and snowmelt runoff in a manner that is safe for the public and does not harm the environment.

Construction and maintenance of facilities to properly manage stormwater is an expensive and long-term cost. The reasons for this include:

1. City residents have expressed a strong desire to preserve the quality of Spring Creek, a Class II coldwater trout stream.

2. Results of previous drainage studies have identified improvements to address existing stormwater volume and rate control management issues, particularly in the southwest area of the City.

3. Lodi's collection system and other structural facilities need maintenance and improvement.

4. The new statewide property tax cap limits the amount that Wisconsin counties, cities, Citys and towns can increase their overall tax levies to the same percentage as the value that new construction adds to their tax base, or 2 percent — whichever is larger. In future next years, this cap could result in a shortfall to maintain basic services.

Property owners pay an estimated annual cost of $86,123 to fund the current stormwater program in proportion the assessed value of their property relative to the total value of assessed property in the City. The existing system of funding stormwater management with property taxes has little or no relationship to stormwater problems created by a property or the costs associated with the services to safely collect, convey, treat, and dispose of stormwater runoff.

Under a stormwater utility or user fee system, property owners pay for the stormwater program based on the amount of runoff generated by their property. Studies have shown that the amount of impervious area associated with a parcel of land is closely correlated to the volume of runoff generated by the parcel. Thus, impervious area is typically the "meter" used to measure "stormwater program use" similar to the way a water meter is used to measure water use in a water utility. Stormwater utility fees are a funding alternative developed to allocate the cost of stormwater management based on:

1. The relative cost of services, and

2. The impact on stormwater runoff from each land parcel in the stormwater management service area.

In addition, a user fee system is a dedicated long-term funding source that provides for community-wide control and management of stormwater.

The concept of the stormwater utility was developed in the western United States in the mid-1970s. Since that time, municipalities across the country have adopted ordinances to initiate a stormwater utility. In following this trend, stormwater utility systems for funding management programs have been established in Wisconsin. In 1994, the City of Lake Delton established the first stormwater utility in Wisconsin. As of 2005, at least 26 communities in Wisconsin had adopted a stormwater utility and countless others are in the process of studying the feasibility of implementing and creating a program. Communities with an adopted stormwater utility include:

Appleton	Fitchburg	Lake Delton	Poynette
Baraboo	Glendale	Madison	River Falls
Bellevue	Grand	Milwaukee	Sun Prairie
Buchanan	Chute	Monona	St. Francis
Butler	Greenville	Neenah	Wauwatosa
Combined Locks	Harrison	New Berlin	West Allis
Cudahy	Janesville	Oshkosh	Weston
Eau Claire		Palmyra	

1.2 IMPERVIOUSNESS AND STORMWATER

The relative percentage of impervious area cover has been determined by research in flood/stormwater analyses to be the most significant consideration in determining runoff characteristics. Studies show that streams generally exhibit effects (reduced variety of aquatic life, habitat degradation, etc.) when the stream's watershed approaches 10 percent imperviousness. Ten percent imperviousness is equivalent to a watershed with residential development of low-density (2 acre) residential lots. Most indicators of stream quality (biology, chemistry, physical habitat) shift to poor once the impervious area in the watershed reaches around 25 to 30 percent, which is equivalent to medium density (1-1.75 acre) residential lots. The volume of runoff also increases with the amount of impervious area since infiltration becomes more limited. The principal factor for the cost of stormwater facilities is the amount of impervious area. Therefore, the City of Lodi's stormwater management program has been developed around the planning, designing, building and maintenance of infrastructure for managing the runoff from impervious areas.

1.3 EQUITABLE FEES

A stormwater utility is based on an equitable system and is an advantage to all taxpayers. Historically, communities have paid for stormwater management with property taxes which are based on property value. The factors that determine how much runoff is generated by a parcel are not considered.

Stormwater user fees, on the other hand, are based on a property's relative stormwater contribution. The stormwater customers who generate larger amounts of stormwater runoff pay proportionally more than other customers. In determining a stormwater utility fee, a user's potential runoff contribution and the City's cost to provide service is calculated. The fee is then assessed to the property owner.

The utility is based on an equitable system that charges for use of the City's stormwater facilities, rather than assuming a flat rate for all users, regardless of utilization. This approach is consistent with other types of user fees in that the fee is based on the rate of use (potable water), or generation rate (solid waste). Like other user fees, the rate is independent of the user's distance from the facility providing the service such as a well, treatment plant, landfill, or detention pond. In many utilities (water, wastewater, and stormwater), there is a base unit charge for all customers

and another rate structure for users with additional services. A water utility, for example, may charge a flat base unit charge for the first 6,000 gallons of water consumed. The base unit charge is one method to simplify rate structures while balancing complete equity with the need to keep the administration costs to a minimum.

Under the stormwater utility system, the cost of funding the City's stormwater management program would be partially shifted from the residential customers to commercial, industrial, and tax-exempt customers to more accurately reflects the second group's greater contributions to the stormwater system. Specific information on the estimated distribution of stormwater program funding under a stormwater utility in the City is included in Section 3.5 of this report.

1.4 EXPECTED BENEFITS

Program costs in a user fee system are distributed to each of these classes according to: 1) a user's relative impact (quantity and quality) on the stormwater management system; and 2) the services provided. The many services received by landowners in a comprehensive stormwater management program include:

- A community-wide approach to flood control and drainage
- Enhanced water quality in area wetlands and waterways, including Spring Creek
- Improved maintenance of existing infrastructure reducing cost of structural repairs
- More responsiveness to drainage complaints
- Maintenance of environmentally sensitive lands
- A community that is more aware of stormwater runoff issues

2.0 PROGRAM SERVICES AND COSTS

2.1 OVERVIEW

A municipal stormwater management program is typically divided into five fundamental components: program management and administration, engineering and planning, inspection and enforcement, operation and maintenance, and capital improvements. A description of typical activities for each program component are described below and listed in Table 2-1.

2.1.1 Program Management

Program management costs include staff time allocated for activities such as scheduling, budgeting, grant writing and administration, permit compliance, and public information.

2.1.2 Planning and Engineering

The Municipal Engineer or Engineering Consultant is typically responsible for the planning, design, supervision, of stormwater projects, including grading, drainage ways, detention facilities, and storm sewers, and coordination of various Public Works construction and maintenance projects. Engineers also review individual or large-scale developments within the City for compliance with City regulations and policies.

2.1.3 Inspection and Enforcement

The third component of the stormwater management program is inspection and enforcement. Typical programs include storm sewer televising, site plan and project plan review, site inspection, and enforcement actions. Construction site erosion control and stormwater management ordinances are typically enforced through a cooperative effort

involving building inspectors, the City Engineer, and the Department of Public Works. An average of two projects per year require review and inspection for stormwater related issues in the City of Lodi.

2.1.4 Operation and Maintenance

The Department of Public Works is typically responsible for repair and maintenance of the City's curb and gutter, storm sewer and inlets. This department is also in charge of street sweeping.

2.1.5 Capital Improvements

Municipalities typically maintain an internal capital improvement document that is used for budgeting and planning purposes. In addition, the municipalities typically have a stormwater management plan that identifies areas where additional detention storage is needed.

2.2 EXISTING PROGRAM COSTS

The current annual cost of stormwater program costs, excluding capital improvements is roughly estimated to be $46,123 or approximately 3.4 percent of the annual local general tax revenue. In addition to annual operational costs, the Village estimates that it spends approximately $40,000 annually constructing and/or replacing storm infrastructure associated with street reconstruction projects[1], making the total existing program budget $86,123. See Appendix A for a detailed existing stormwater program budget, and Appendix C for stormwater program budget notes.

2.3 FUTURE PROGRAM COSTS

The City's intent to implement a program and practices to address existing drainage issues and improve the quality of Spring Creek will increase the annual operational costs of the stormwater management program by $17,318, to $63,441. In addition to operational costs, the City anticipates spending $50,000/year for capital improvements. This figure includes the aforementioned $40,000 for storm infrastructure associated with street reconstruction projects, and $10,000 for infrastructure to address flood control, water volume, erosion and/or water quality issues, for a total of $113,441 annually. See Appendix B for a detailed proposed stormwater program budget, and Appendix C for stormwater program budget notes.

TABLE 2-1 STORMWATER PROGRAM BUDGET SUMMARY

	Existing Budget	Proposed Future Budget
Operational Expenses	$46,123	$63,441
Capital Improvements	$40,000	$50,000
TOTAL	**$86,123**	**$113,441**

[1] This figure includes the full average annual cost of $15,000 for storm infrastructure construction associated with street projects, and half of the $50,000 average annual cost for curb and gutter.

TABLE 2-1 TYPICAL MUNICIPAL STORMWATER PROGRAM COMPONENTS AND ACTIVITIES

Program Management and Administration

- Grant Writing and Administration
- Database Maintenance
- General Permit Activities
- Public Awareness and Involvement

Review, Inspection and Enforcement

- Code Development
- Permit Administration
- Site Plan and Project Plan Review
- Site and Project Inspection
- Enforcement Actions
- Illicit Discharge Detection & Elimination

Capital Improvements Program

- Major Capital Improvements
- Minor Capital Improvements
- Land, Easement and Right-of-Way Acquisition

Planning and Engineering

- Stormwater Master Planning
- Storm Sewer System Map Updates
- Storm Infrastructure Engineering

Operation and Maintenance

- Sump Cleaning
- Roadside Ditch Excavation
- Detention Pond Excavation
- Inlet Inspection and Cleaning
- Inlet and Catch Basin Repair
- Curb and Gutter Repair
- General Outfall Inspection and Maintenance
- Outfall Repair
- Mowing
- Refuse Clean Up and Disposal
- Storm Sewer Televising
- Street Sweeping
- Leaf Removal
- Vehicle and Equipment Operation and Maintenance and Fuel

3.0 RATE STRUCTURE AND ANALYSIS: ERU APPROACH

3.1 EQUIVALENT RUNOFF UNIT (ERU) APPROACH

In Wisconsin, the most commonly used approach for determining stormwater utility charge is the Equivalent Residential Unit (ERU) method. An ERU is a billing unit that represents the average impervious area associated with single residential unit. It is a weighted average of the impervious area of associated with single-family homes, duplexes, multifamily units and mobile homes. Under a typical stormwater utility, each single-family residential living unit is charged one ERU, and each duplex and multi-family residential unit is charged either one ERU, or a fraction of an ERU. Residential units are used as the basis for comparison in a stormwater utility because: 1) typically the customer class is fairly uniform as to the magnitude of impact per customer, 2) it is the largest single customer class, and 3) a pre-determined base rate simplifies the administration of the billing system and represents a equitable system of charging fees.

The preliminary feasibility study documented in this report provides the City with estimate of charge rate and distribution under ERU-based stormwater utility. The ERU approach was utilized for this level of study because its simplicity, and because its widespread utilization throughout the state makes it easy to compare results of this study with data with stormwater utilities throughout the state.

We recognize, however, that the City may be interested in evaluating alternative stormwater utility rate structures. For this reason, descriptions, examples, and a discussion of the advantages and disadvantages of alternative stormwater utility approaches are include in Sec.5.0 of this report, and will be investigated in more depth if directed to do so by the City.

3.2 ERU ANALYSIS

MSA typically determines the ERU size by using aerial photos to measure the impervious area of a statistically significant random sample of single-family homes and all multi-family units. Figure 3-1 illustrates the impervious areas for a typical single-family parcel. Specifically, the Lodi ERU was estimated to be 3,052 square feet—the weighted average impervious area of Lodi living units, including single-family houses, duplexes, and multi-family, as summarized in Table 3-1. This is near the average ERU size for Wisconsin municipalities, roughly 3,000 square feet, as is illustrated by Figure 3-2.

TABLE 3-1. RESIDENTIAL UNIT IMPERVIOUS AREA SUMMARY

	Average Impervious Area Per Living Unit	Approximate Number of Units Citywide
Single-Family	3,371	774
Duplexes	2,594	60
Multi-Family	1,915	193
	Weighted Average = 3,052	**Total Living Units = 1,027**

FIGURE 3-1. SINGLE FAMILY RESIDENTIAL PARCEL IMPERVIOUS AREA

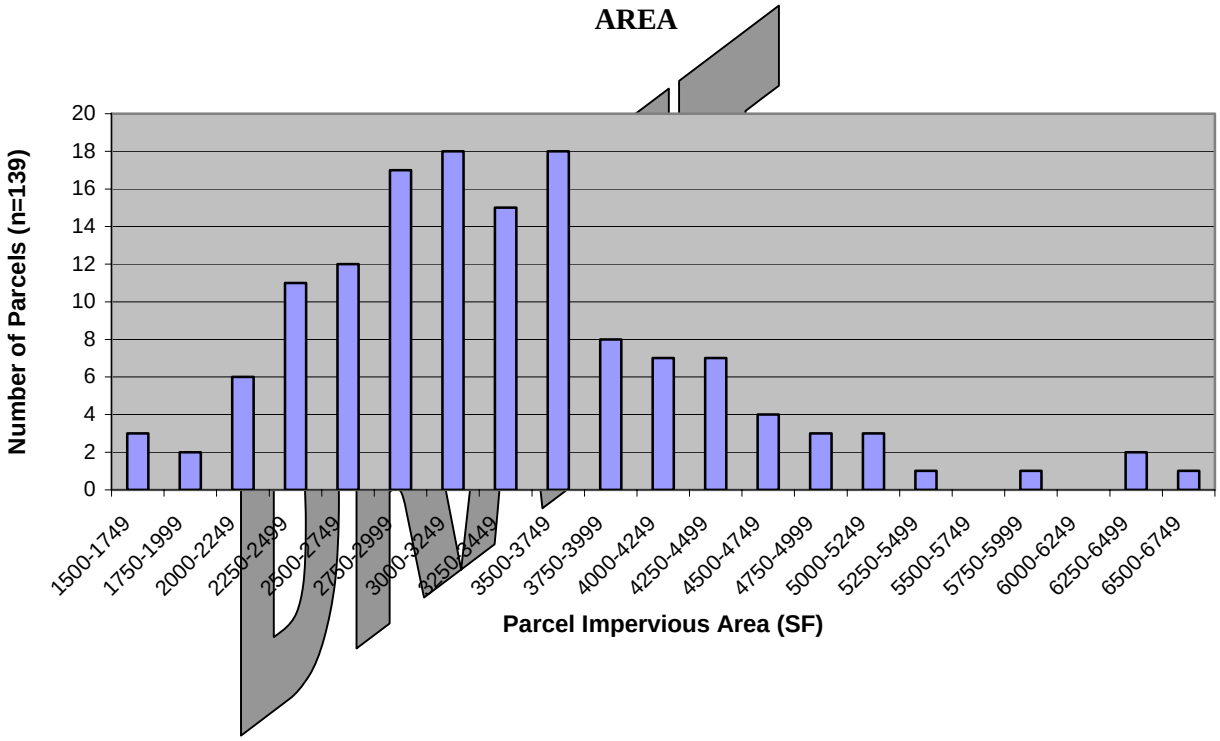
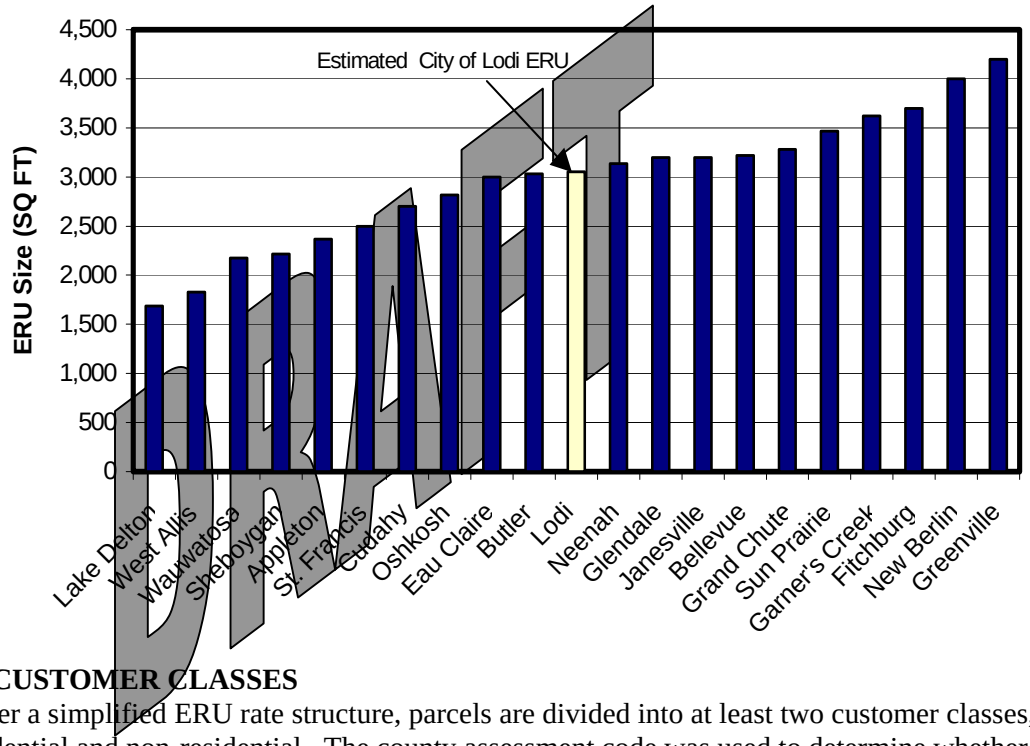


FIGURE 3-3 WISCONSIN STORMWATER UTILITY ERU SIZE COMPARISON



3.3 CUSTOMER CLASSES

Under a simplified ERU rate structure, parcels are divided into at least two customer classes, residential and non-residential. The county assessment code was used to determine whether each parcel was residential or non-residential.

3.3.1 RESIDENTIAL

In this study, the residential customer class includes single-family residential homes, duplexes, and multi-family units. Each of the city's 774 single-family residential parcels, 60 duplex units, and 193 multi-family residential units were assigned 1 ERU.

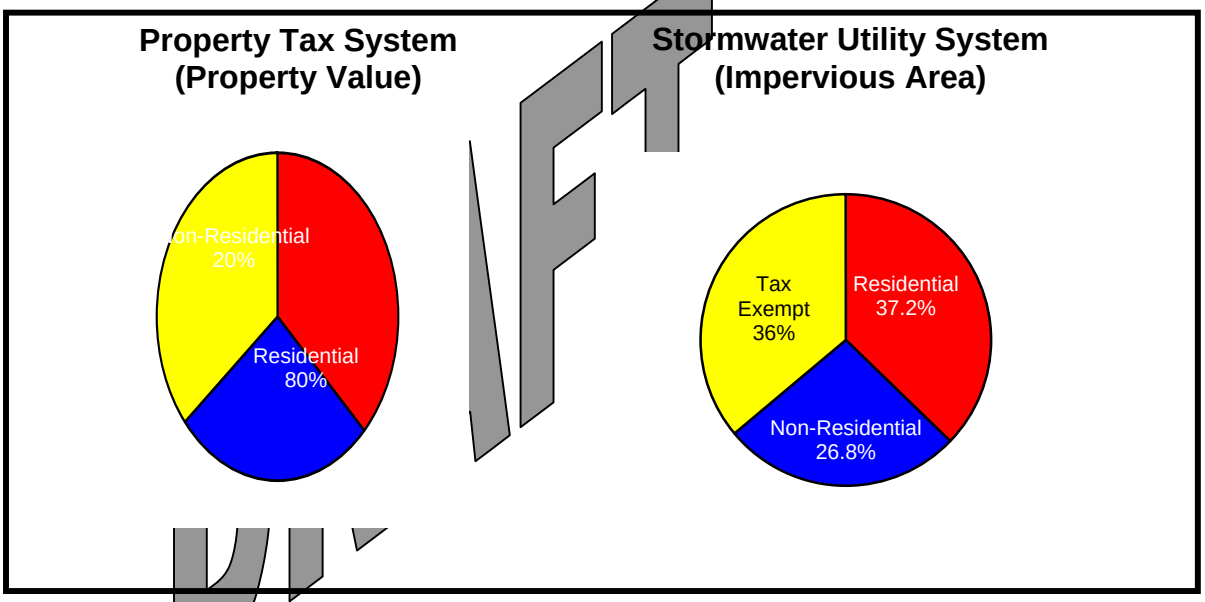
3.3.2 NON-RESIDENTIAL

MSA estimated the total area of non-residential impervious area using parcel and land use data. Specifically, 85 percent of the 38.9 acres of developed commercial parcels were assumed to be impervious for a total of 554.6 ERUs, and 72 percent of the City's 13.1 acres of manufacturing parcel area was assumed to be impervious for a total of 186.6 ERUs; and 60 percent of the City's 69.7 acres of tax-exempt non-residential parcel area was assumed to be impervious for a total of 995.3 ERUs. The total estimate non-residential ERUs Citywide is 1736.5.

3.4 ERU SUMMRY RESULTS

Figure 3-5 summarizes the results of the ERU analysis of all parcels in Lodi. The total number of ERUs in the community is 2,763.5; 37.2% of these are residential ERUs while 62.8 % are non-residential. Of the non-residential ERUs, almost half are from tax-exempt parcels. Figure 3-3 shows how the estimated allocation of stormwater management costs in the City of Lodi shifts between tax system and a user fee system.

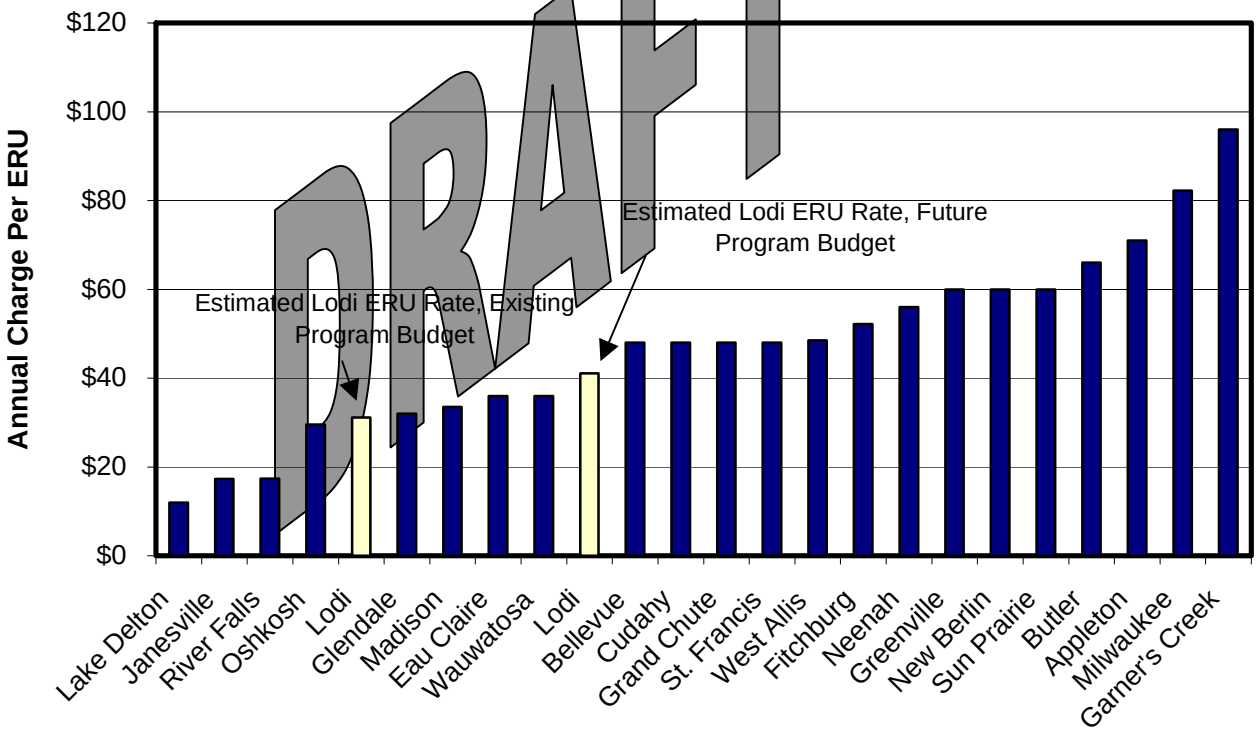
FIGURE 3-3 ALLOCATION OF STORMWATER PROGRAM COSTS
PROPERTY TAX VS STORMWATER UTILITY SYSTEM



3.5 RATE ANALYSIS

The charge per ERU to support the stormwater budget was calculated by dividing the total stormwater budget by the total number of ERUs. For the estimated existing annual stormwater budget of $86,123 this is $31.16 per year or $2.80 per month. The charge per ERU to support the estimated future budget of $113,441 this is $41.05 per year or $3.42 per month. Figure 3-4 illustrates how the estimated Lodi Utility Rate for supporting the existing and projected future budget and ERU size compares to the annual ERU rate from other communities throughout Wisconsin.

FIGURE 3-4 WISCONSIN STORMWATER UTILITY RATE COMPARISON



4.0 ANALYSIS OF FEASIBILITY STUDY RESULTS

4.1 PROPERTY TAX SYSTEM COMPARISON

As the feasibility study results show that a stormwater utility would shift a significant portion of stormwater program costs from residential to non-residential customers, it comes as no surprise that a comparison of residential and non-residential stormwater program charges under the current property tax system, and under the estimated ERU-based stormwater utility document in this report, results in an increase in stormwater program charge for non-residential customers, and decrease for residential customers. Table 4.1 shows how charges for a "typical" customer in each of these two customer classes varies between the current tax system, and the proposed utility, under the existing and proposed future program budgets. According to these data, a typical Lodi residential parcel (valued at $130,000) will pay significantly less under a stormwater utility than under the current system. By contrast, a "typical" Lodi non-residential parcel, assumed to be 80 percent impervious and have an assessed value of $310,000 per acre, will pay more under a stormwater utility than the current system.

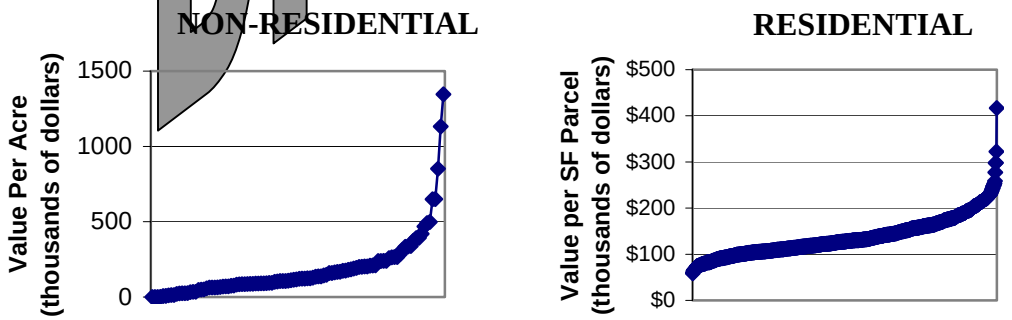
TABLE 4.1 "TYPICAL"CUSTOMER STORMWATER PROGRAM CHARGE[2]

	Existing Stormwater Program Budget		Estimated Future Stormwater Budget[3]	
	Property Tax System[2]	ERU-Based Stormwater Utility	Property Tax System[2]	ERU-Based Stormwater Utility
Residential	$74.07	$31.16	$97.56	$41.05
Non-Residential	$182.32	$355.84	$240.15	$468.71

4.2 DATA INTERPRETATION

These graphs should be used with caution, should not be used by individual parcel owners to estimate their fee, as there is significant variability in impervious area and assessed value per acre among parcels in the City, as illustrated by Figures 4.2-1 and 4.2-2. For example, a non-residential parcel with a lower than average percent imperviousness and higher than average assessment, could potentially pay less under a stormwater utility than under the current system.

FIGURE 4.1 VARIABILITY IN PARCEL ASSESSED PROPERTY VALUE



5.0 ALTERNATIVE STORMWATER UTILITY APPROACHES

Although the ERU is the most common method for stormwater utility rate structures, it is by no means the only approach. Communities concerned about equity and/or water quality frequently use modified ERU-approach and/or direct measurement to address these concerns.

5.1 EQUITY VS OVERHEAD

A large part of the attractiveness of stormwater utilities comes from the concept of equitability. If stormwater management activities are paid for out of the general tax fund, residence and business owners pay for stormwater management relative to the tax-value of their property, which often has little to do with a site's potential to generate stormwater runoff. Stormwater utilities charge fees based on the propensity for a given parcel to generate stormwater runoff. A major reason why many communities elect to use an

[2] Figures are based on a total local City assessed value of $151.16 million, a local tax rate of $8.96 per thousand local tax rate and a $1.35 million levy.
[3] Assumes that the local assessed value and all other City program budgets stay the same

alternative stormwater utility approach is to address concerns about equity, both among residential and non-residential customers. Primary concern for residential parcels is equitability; under a basic ERU system, someone who lives in a giant mansion with a four-car garage pays the same amount as someone in a small house on a small lot. Another concern for residential parcels is whether to charge a fee for pervious areas. Although in 90 percent of all storm events, almost all runoff comes from impervious area, in large storm events, after soils become saturated, pervious areas also generate runoff. For this reason, stormwater utilities that charge for pervious and impervious areas typically charge a lower rate for pervious areas.

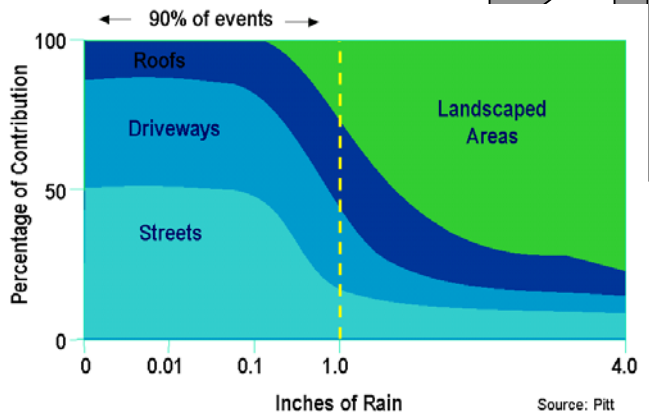


FIGURE-4-2 RUNOFF CONTRIBUTION BY SOURCE AREA
In 90 percent of storm events, almost all runoff is generated by impervious areas. Less frequently, soils become saturated during large storm events and pervious areas also generate runoff.

These concerns about equity have led a few communities to develop stormwater utilities with more complex rate structure. However, ERU rate is still by far the most common approach. The reason for this is overhead. Obviously, the stormwater utility must raise funds to cover stormwater management program costs such as design and construction of stormwater management facilities that protect against flooding and help reduce pollution to activities necessary to operate and maintain the system; everything from building detention ponds, installing new sewers, sweeping the streets, and picking up leaves. However, a utility must also send bills and collect payment – and ensure that the bills are accurate. These latter costs are overhead.

One way to reduce costs of establishing and operating a utility is to use an average charge for properties that have relatively little variation in parcel size and or impervious cover. Residential properties represent the largest percentage of parcels in the average municipality and compared to non-residential properties, the variation in per-living-unit lot size impervious area is much less variable. If each residential parcel is treated the same, only varying in fees according to the number of living units within each parcel. Since the measure of charges is the average of all residential parcels, it is not necessary to be concerned about the individual activities occurring on any or all of the parcel, negating the need to track individual building permits, thereby reducing annual operational costs.

By contrast if each residential parcel is evaluated individually and charged on an individual basis, it is important to ensure that the charges are accurately determined according to the use of each parcel. When the use of the parcel changes, the stormwater utility fee need to change as well. For example, consider that the Villag of Lodi has 1,176 parcels, 837 of which are residential. Assume that each year, approximately 10% of these have improvements that changes to the impervious area of the parcel. That represents 84 parcels each year where new decks, patios,

garages, and building additions need to be measured and the stormwater utility billing database updated. At an estimated cost of $100 to update each stormwater utility database record (including time to measure the new impervious area, verify construction, and update the database and billing record) this represents a significant cost, one that works out to approximately $8400 per year, or $3.04 per ERU.

5.2 RATE STRUCTURE

The ERU-based rate structure is by far the most common method of setting up a stormwater utility. The widespread popularity of ERU-based utilities can be attributed to the fact that the simple rate structure provides minimal overhead costs, without sacrificing equity. Low overhead costs important for politically salability of a utility, both in terms of keeping charge rate low, and to prevent fueling the perception that the utility is just creating another layer of government bureaucracy that has to paid for by property owners.

However, other types of rate structures exist, ranging from a flat-rate per parcel system to complex rates are based on actual measurement of pervious and impervious area on every parcel. A description and example of the various approaches are described below.

5.2.1 FLAT RATE STRUCTURE

The simplest way to structure a stormwater utility is to simply charge a flat rate for every parcel. The advantage of this approach is that both start-up and ongoing utility administration costs are low. The disadvantage is that charge is not based on any measurable parcel property representative of stormwater program use. Thus, while the flat-rate structure may provide some minimal improvement in equity by distributing charge tax-exempt parcels, it has no ability to differentiate between a big box retail store or large warehouse, and a small church or home. Since the basis of any utility is that fee is based use, this approach could potentially be challenged legally. This approach is typically used on a temporary basis by communities in the process of establishing a utility, to raise money to develop the data needed for a per-parcel utility fee.

5.2.2 ERU-BASED STRUCTURES

As previously mentioned the Equivalent Residential Unit (ERU) method is most common in Wisconsin. An ERU is a billing unit that represents the average impervious area associated with single residential unit. It is a weighted average of the impervious area of associated with single-family homes, duplexes, multifamily units and mobile homes. Under a typical stormwater utility, each single-family residential living unit is charged one ERU, and each duplex and multi-family residential unit is charged one ERU or a fraction of an ERU. As previously discussed, the ERU provides a reasonable balance of equity with low overhead costs. The primary disadvantage, is that it provides no incentive to minimize parcel imperviousness, and may not be equitable in communities with large variation in impervious area among residential parcels. Several different types of ERU based systems are discussed below.

5.2.2.1 SINGLE RESIDENTIAL CUSTOMER CLASS

Under an ERU-based stormwater utility with a single residential customer class, each residential living unit, regardless of whether it is a large single-family home or a single unit in an apartment complex, is charged a flat rate. The advantage of this system is simplicity and low overhead costs. The disadvantage is this system is that the impervious area associated with multi-family units is typically much lower than that of a single-family parcel, and this is not reflected in utility rates.

5.2.2.2 MULTIPLE RESIDENTIAL CUSTOMER CLASSES

Many communities divided residential living into more than one customer class, with single-family parcels charged a flat rate of one ERU, and duplexes and/or multi-family units charged some fraction of an ERU. In communities with an abnormal distribution of impervious area among single-family parcels perhaps reflecting a difference between old and new, or low and high income, neighborhoods, single-family parcels are also divided into more then customer class. Some residential parcels are charge one ERU while others are charged a fraction or multiple of an ERU.

Under a multi-residential customer class scenario, duplexes could be charged 0.75 ERUs per living unit, and multi-family units charge 0.5 ERUs per unit. Under this scenario, the number of Citywide residential ERUs would decrease, shrinking the percentage of the stormwater program paid for by residential utility customers from 37.2 percent to 34.5 percent. The reduction in Citywide ERUs would increase the charge rate for funding the stormwater program from $41.05 to $42.78 annually.

The rapidly growing City of Sun Prairie with ERU size is 3,468 square feet, is an example of the former scenario. Single-family parcels and mobile homes are charge 1 ERU; duplex units are charged 0.65 ERUS, and multi-family units are charged 0.4 ERUs

The City of Dubuque, with an SFU of 2,917 square feet, provides an example of multiple customer classes among single-family units. Specifically, “small” single family parcels (1,471 sq feet or less square impervious area) are charge 0.5 ERU and “large” single family parcels (4,375 or more sq feet impervious area) are charged 1.5 SFU. Multi-family units, condominiums, and mobile home units are charged 0.42, 0.83 and 0.65 SFUs, respectively. (Similar to an ERU, an SFU is and equivalent single-family unit, the size of an SFU is equal to average impervious area of single -family parcels).

The charge fraction for each customer class in five Wisconsin stormwater utilities with ERU-based rate structures and multiple residential customer classes, is summarized in Table 5-1.

TABLE 5-1 EXAMPLES OF ERU-BASED RATE STRUCTURES MULTIPLES RESIDENTIAL CUSTOMER CLASSES

	ERU Size	RESIDENTIAL CUSTOMER CLASS				
		Single-Family "Large"	Single Family "Ave"	Single Family "Small"	Duplex Units	Multi-Family Units
Baraboo, WI	2,379	NA	1.0	NA	0.67	0.67
Dubuque, IA	2,917	1.5	1.0	0.5	0.42	0.42
Monroe, WI	2,738	NA	1.0	NA	0.5	0.5
Poynette, WI	3,550	2.5	1.0	NA	0.7	0.5
Sun Prairie, WI	3,468	NA	1.0	NA	0.65	0.4

5.2.2.3 MODIFIED ERU RATE SYSTEMS

Some communities with an ERU-based rate structure modify the number of ERU assigned to non-residential parcel based on other parcel characteristics, such as intensity of development or pervious area.

The City of Fitchburg provides an example of a modified ERU based system. In Fitchburg, the number of ERUs assigned to each parcel based on imperviousness is multiplied by a factor representing the parcel's "intensity of development". The intensity of development factor is assign based on the parcels overall parcel impervious area. Perhaps this approach may provide an added incentive to minimize on-site impervious area. However, the disadvantage creating an incentive for low-density development has the counter-effect of encouraging urban sprawl.

Another example of a modified-ERU system is the City of Palmyra, where the ERU size is 5,873 and represents the impervious area plus one-fifth of the pervious area on an average residential parcel. Each residential parcel is charged a flat rate, but each non-residential parcel is assigned ERUs equal to its impervious area plus on fifth its pervious area divided by the ERU size. By charging for pervious area, this approach does not provide as much reward for customers that minimize imperviousness, but is more equitable since pervious areas do generate runoff in large rain events.

5.2.3 MEASURED AREA BASED-STRUCTURES

Measured-area based stormwater utilities structures charge customers based on the actual square feet of impervious and/or pervious area. One advantage of this approach is that charge is based on a standard unit of measure so it likely to be easier for customers to understand. One disadvantage is that this method generally requires more data tracking and is therefore often associated with higher overhead costs, which are then reflected in higher charge rates.

5.2.3.1 MEASURED IMPERVIOUS AREA

The most basic form of this type of utility is to charge customer based on per-square foot of measured impervious area. This is similar to the ERU system, except the unit of measure is square feet rather than an ERU.

5.2.3.2 MEASURED IMPERVIOUS AND PERVIOUS AREA

Some stormwater utilities based on actual measure area include a charge for both pervious and impervious area, although the charge for pervious area is almost always significantly less. The City of Madison provides a close-to-home example of this—the City charges utility customers $0.00039 per square foot pervious area ($16.98/acre) and $0.0055 per impervious square foot ($239.58/acre) area. Note while the City of Madison and the City of Palmyra both charge for pervious and impervious area, Madison's utility uses the measured method, and Palmyra's is an ERU-base rate structure. Furthermore, the Village of Palmyra charges only 5 times more for impervious area than pervious area, whereas the City of Madison charges fourteen times more.

5.3 CREDITS

Municipalities with stormwater utilities typically offer credits to eligible parcels. A credit is a reduced ERU multiplier. A customer who receives a credit will have the number of ERUs assigned to their property multiplied by some number less than one. Credits differ from adjustments, which are a change in the number of ERUs assigned to a parcel. A customer who receives an adjustment may have the number of ERUs assigned to their property reduced or increased and is typically granted to reflect more accurate or up-date information about the amount of impervious area associated with a particular parcel. Under a credit however, there is no change in the number of ERUs assigned to a particular property, but the number of ERUs is multiplied by some number less than one, so the fee per ERU is less than the actual rate. Communities that offer credits need to adjust their stormwater utility revenue target upwards to meet the actual revenue requirement. As utility credits are approved and individual bills are reduced (sometimes by thousands of dollars per year) the average utility bill must increase to maintain a stable utility revenue stream. They types of parcels and practices eligible to receive a credit varies among stormwater utilities.

5.3.1 POLICY REVIEW

An MSA review of the stormwater utility credit policy of twelve municipalities, half of which are located in Wisconsin, the other half in states including South Carolina, Minnesota, Indiana, Georgia, Utah and Washington yielded summary information on how each community handled stormwater utility credits in five areas, and is summarized below.

5.3.1.1 APPLICATION FEE

Of the communities we looked at, at least one-third charge an application fee to cover all or part of the review and processing of the stormwater utility credit application. Application fees ranged from $50 to $250, with the average being approximately $160. One community (Sun Prairie) refunds the application fee if the credit is approved.

5.3.1.2 STORMWATER MANAGEMENT STANDARDS

Some communities allow property owners to take credit for practices and activities required to meet local stormwater management standards, while others

only award credits to those who exceed standards. In some cases, the two approaches are combined, with credit awarded for meeting standards, and additional credit awarded for activities that exceed standards. Of the ten communities we had information for in this category, 20 percent gave credit only for activities/structures meeting ordinance standards, 40 percent only gave credit for exceeding ordinance standards, and 40 percent gave a small amount credit for meeting standards, and additional credit for exceeding standards.

5.3.1.3 PARCEL ELIGIBILIGY

Most communities that offer stormwater utility credits only offer credit to property owners that install and maintain significant stormwater management infrastructure, and/or conduct non-structural best management activities, such as street sweeping, infrastructure maintenance, and/or education. As such, in most communities single-family residential parcels are not eligible to receive credits. A local exception is the City of Fitchburg, Wisconsin, which offered credit to single family residential parcels, up to $10.50 per quarter, for installing pervious pavement, a rain barrel or cistern, and/or a rain garden.

5.3.1.4 PRACTICE/ACTIVITY ELIGIBILITY

The types of activities and infrastructure that communities award credit for was all over the board, but can be grouped into the following categories: runoff rate control, runoff volume reduction, runoff quality improvement, and "other". In addition, some communities give credit to properties that discharge directly into a major receiving water body, such as Lake Michigan, Lake Winnebago, or the Fox River, either via overland flow, or via privately owned and maintained conveyance facilities. Typically "direct discharge" credit is not awarded to properties that discharge into a creek that subsequently runs through the municipality and/or to dischargers that do not meet the rate control and water quality requirements contained in local ordinances. In almost all cases, credit for structural BMPs is dependent on private maintenance of facilities, and allowing the municipality access to property to make sure credited facilities are adequately maintained. Among the communities we looked at 92 percent gave credit for rate control, 33 percent for volume reduction, 50 percent for water quality improvement 33 percent for direct discharge and 25 percent additional credit for other activities, such as stormwater education, open space preservation, and responsible implementation of a private industrial NPDES permit.

5.3.1.5 MAXIMUM CREDIT

Almost all communities we looked at had capped the amount of credit allowed at some percentage of the total fee. Among the communities we looked at the maximum allowable credit ranged from 40 to 85 percent. The average and median were 66 and 65 percent, respectively.

6.0 IMPLEMENTATION

6.1 STORMWATER USER FEE ORDINANCE

A stormwater user fee ordinance establishes the utility system as the principal funding mechanism for the City's stormwater management program. The ordinance delineates the rate structure and user rates and specifies procedures for collecting fees and dealing

with delinquent bills. Stormwater rates and user fees established by the ordinance do not require approval by the Public Service Commission.

The ordinance should specify the method for computing the fees for each of the customer classifications. A system of flat rates for residential customers and individually calculated bills for non-residential customers is the format most rate structures utilize.

Non-payment must also be addressed in the ordinance. In most communities, the unpaid balance becomes a lien against the property in the same way that unpaid water bills become a lien against the property. It is important to maintain and enforce a policy on the non-payment of fees. A method for customers to appeal the fee charged against them must accompany this policy.

The stormwater fee is typically added to all existing utility bills issued for water and sewer service. Customers not currently receiving water or sewer charges will receive a bill with only a stormwater fee assessed. A number of customers would need to be added to the system billing database. The ordinance establishes a stormwater-fee-only account in the form of a trust fund or enterprise fund.

6.2 BILLING AND COLLECTION

Prior to implementing the new billing system, a number of policy decisions must be made. Some accounts may have to be added as “stormwater only” to the existing billing system for parcels that do not currently have a utility (water, wastewater, or solid waste) account. Also, a procedure will need to be developed to equitably distribute the stormwater bill to multiple customers on the same parcel. The City utility has accounts and billings established for most of the parcels. The stormwater user fee account structure and billing system should follow this model and be incorporated into the existing utility billing system as much as possible. This will avoid a major duplication of effort. This means that, where practical, a parcel's utility account number should be used as the parcel's stormwater account number.

6.2.1 Single Meters

Most parcels with water service have a single water utility customer with a single water meter (a single account number) and receive a single water utility bill. For these parcels, all of the stormwater fees charged to the parcel, whether a flat customer class rate or calculated based on actual impervious area, are billed to that account. Allocation of the stormwater bill to multiple tenants is the responsibility of the property owner. Requests for the City to allocate the stormwater bill to the various occupants should, generally, not be honored. This allocation of the stormwater bill and the addition of new stormwater accounts increases the complexity, costs, and maintenance requirements of the billing system, thereby increasing the cost to the general public.

6.2.2 Multiple Meters

Where multiple meters (i.e., accounts) exist on a single parcel, an equitable share of the stormwater bill will need to be allocated to each customer on that parcel. The procedure for allocating the bill should be kept simple so that an undue burden is not placed on the administration of the user fee system. For example, if there is a separate water meter for each of three commercial tenants and each store is the same size (responsible the same impervious area), each account would receive a third of the parcel's total stormwater bill. As a related matter, if

there are single-family homes that have separate sprinkler/ irrigation meters, they should only receive one stormwater bill.

6.2.3 Inactive Accounts

Inactive accounts in a typical water and sewer utility can run as high as five to ten percent of the total installed meters. Unlike the typical water and sanitary sewer utilities where services are turned off if the customer moves out, the fact that the parcel is unoccupied does not stop the parcel from contributing to the City's stormwater management needs. While there are not significant numbers of inactive utility accounts in the City of Lodi, a system should be in place to handle them. Options that could be considered include: 1) continue to bill on a quarterly basis, 2) continue to bill with the bill going to the owner as a service charge on the annual tax bill, 3) charge the owner a minimum service fee, 4) do not charge inactive accounts, or 5) continue to accumulate charges for stormwater, which would then be paid when the account is reactivated.

Although inactive utility accounts are often charged a low flat fee, or no fee at all, this is not considered equitable where stormwater accounts are concerned. The property is still generating runoff to the stormwater management system even though there is no one occupying the premises. In this sense, an inactive account is similar to a developed unmetered parcel (discussed below) for which regular stormwater billing is recommended. Because commercial and industrial parcels make up a large portion of the revenue base for the stormwater user fee system, a single large unoccupied retail store or warehouse could represent a substantial loss in revenue. It is recommended that the City adopt a policy for the stormwater utility that is similar to that currently in use for the water and sewer billing. However, if the stormwater bill is sent to the owner of the property there should not be any "inactive" stormwater accounts.

6.2.4 Developed Un-Metered and Undeveloped Property

New accounts should be established for developed properties that, for one reason or another, do not have a water and sewer utility account. A parking lot or a home on its own well and septic system are examples of this type of development. Developments like these are not in the water and sewer billing system because they are not customers of either utility. Completely undeveloped property (open field) owners are not charged a stormwater fee. These properties are brought into the stormwater user fee billing system when development that adds impervious area occurs. This newly developed property should be handled in one of the ways mentioned above for already developed property (single meter, multiple meters, or un-metered). Development activity that creates impervious area where there was none before can be tracked using the City's building permit system.

6.2.5 Fee Collection System

A system for billing utility services on a City-wide basis already exists. The stormwater user fee billing system should be patterned after the policies and procedures already in place for the water and sewer utility billing system as possible. Stormwater user fees should be collected along with the water and sewer charges. For those stormwater customers with utility service, the stormwater charge would appear as an additional item on the bill. Stormwater customers who do not receive water and/or sewer services (and hence no utility

bill) would receive a charge for the stormwater services provided. Most stormwater account adjustments will be for changes in the impervious areas on non-residential parcels. A residential customer's bill would change only if the parcel is reclassified (e.g., single family to duplex) or it is redeveloped to a non-residential land use. The stormwater bill sent to a non-residential customer will change if the parcel's impervious area changes. Nonpayment of stormwater charges should be addressed according to the procedures outlined in the stormwater user fee ordinance.

6.3 UTILITY CREDIT PROGRAM

Development of rate structures for the stormwater utility is based on two premises.

1. Equitable distribution of costs to the users;
2. Simplicity and equity.

As a user fee system, the rate structure for the stormwater utility is based on the level of service provided to the user. Level of service is measured in terms of the magnitude of runoff volume discharged from a user's property into the City's system. The greater the use of the system, the more the individual property owner pays.

Property owner credit results only when there is a direct savings to the City's stormwater management program. Stormwater systems that are constructed in fulfillment of a regulatory requirement are not sufficient justification for granting credit. This includes the stormwater discharge restrictions of the City of Lodi and the WDNR's NR 151 runoff management standards. Credit should be considered only if the system constructed results in:

- The City having to perform maintenance less frequently.
- The City being able to avoid or reduce the magnitude of a City-identified capital improvements project.
- Private entities over-sizing their facilities to manage runoff from off-site properties or performing more restrictive actions with on-site stormwater management than required by the City's stormwater ordinance.
- The customer performing a task or in-kind service that decreases the City's cost in its stormwater program.
- One or more of the City's stormwater services not being provided to a property due to the property's location within a watershed.

The City will need to adopt a procedure of granting credits. It is recommended that the following criteria and procedures be followed:

1. Documentation that the credit is warranted. The documentation must be certified by a professional engineer or professional hydrologist licensed by the state of Wisconsin.
2. Existing or proposed stormwater management systems must be properly designed, constructed, and maintained in accordance with all appropriate regulations.
3. Reduction in the cost of the City's capital improvement program that results from the construction of a private stormwater management system or based on the services that are not being received by the customer. The amount of credit should be calculated by either the amortized cost savings over the life of the project or the

portion of the utility bill assigned to capital improvements or other services, whichever is less.

4. Periodic demonstration on the part of the applicant that the private stormwater management system is being operated and maintained properly.

The maximum stormwater utility credit a customer may receive should be set as a fraction of their total cost to reflect that all City landowners receive a benefit from the stormwater utility even if they have a reduced impact on the stormwater management system.

6.4 INTEGRATION INTO EXISTING SYSTEMS

The establishment of a stormwater user fee system involves removing the stormwater management program's budget from the general fund and establishing a revenue collection system that parallels the City's existing water and sewer bill collection process. To keep billing database information current, a system to track and record any changes that affect stormwater utility charge must be established. In many communities, the tracking of this information begins with a building permit.

As the stormwater user fee system is put into place, each of the involved departments will have to familiarize its staff with the concepts, procedures, and practices. Some communities have found a "dry run" of the new tasks useful.

6.5 NEXT STEPS

Should the City decide to proceed with the development and implementation of a stormwater utility, the next step would be as follows:

6.5.1. Develop Public Education Program

A public education program that complements the efforts of the steering committee is also critical to the success of a utility. The public education program should be geared towards facilitating public acceptance of the stormwater user fee. Several communities have found the most effective means of public education to be the production of a short educational video on the stormwater utility. Sun Prairie and Baraboo have both produced such videos.

6.5.3. Refine Rate Structure

Nonresidential parcels require a parcel-by-parcel determination of runoff contribution because of nonuniformity in parcel characteristics. Typically ESRI ArcView and aerial photos provided by the City are used to identify and measure relevant land characteristics and determine the user charge for nonresidential parcels.

Policies for providing stormwater billing credits for property owners who implement stormwater BMPs for controlling the rate, quantity, and quality of runoff leaving their sites must be evaluated and factored into the potential revenue generating potential of the utility.

The residential and non-residential parcel information, along with the tabulated costs of activities covered by the utility are then used to calculate the charge per rate unit. The proposed rate structure should be prepared with an emphasis towards fair and equitable charges based on overall contribution to stormwater management issues.

6.5.4. Prepare Stormwater Utility Ordinance

Prior to implementing a utility, a stormwater utility ordinance documenting the need for a utility and establishing the user charge must be adopted. The ordinance must cover the scope of utility activities, rate structure, details of billing, appeals process and policies for credits. The draft ordinance will be delivered to the City's attorney for development of final ordinance language.

6.5.5. Develop Master Account File

Typically the master account file is developed by performing a computer cross-reference between the assessors database and the sewer and solid waste billing data file to develop a customer base for the storm water user fee program parcels. Addresses that cannot be matched by the computer to utility accounts must be matched manually and input the data into a master-billing file. Appropriate quality control procedures are necessary to verify the accuracy of the parcel/utility billing information.

6.5.6. Develop Protocol for Answering Customer Billing Questions

Although the public outreach program will minimize the number of customer billing inquiries after utility billing begins, questions will inevitably arise. Establishing a protocol for answering customer billing questions can alleviate many problems in this area.

Estimated Annual Storm Water Utility Budget (2007-2012)

Category	Catch Basin Cleaning	Ditch Excavation	Pond Excavation	Curb and Gutter Repair	Outfall Repair	Mowing	Refuse Cleanup and Disposal	Stormwater Master Plan	System Map Updates	CIP Development and Maintenance	Site Plan and Project Plan Review	Enforcement Actions	Billing System/ Database Maintenance
Annual Professional Hours										312			
Annual FT Hours	56.00	10.00		33.00	32.00		72.00					8.00	
Annual PT Hours													
Annual Gallons Fuel													
Personnel													
- Professional Salary, OT, and Benefits	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ 10,049.52	$ -	$ -	$ -
- Full Time Salary, OT and Benefits	$ 1,184.40	$ 211.50	$ -	$ 697.95	$ 676.80	$ -	$ 1,522.80	$ -		$ -	$ -	$ 169.20	$ -
- Seasonal/PT OT, Salary and Benefits	$ -	$ -	$ -	$ -	$ -	$ 2,032.32	$ -	$ -		$ -	$ -	$ -	$ -
Materials and Supplies													
- Fuel	$ -	$ 80.00	$ -	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ -	$ -
- Tools and Labor Related Equipment	$ -	$ 60.00	$ -	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ -	$ -
- Vehicle Maintenance Supplies	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ -	$ -
- Vehicle Reserve Fund	$ 298.22	$ 197.65	$ -	$ 175.74	$ 632.49	$ 4,650.00	$ 718.87	$ -		$ -	$ -	$ 42.60	$ -
Contractual Services													
- Construction Contracting	$ -	$ -	$ 4,000.00	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ -	$ -
- Vehicle Maintenance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ -	$ -
- Printing	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ -	$ -
- Material Disposal	$ -	$ 500.00	$ -	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ -	$ -
- Other	$ -	$ -	$ -	$ 200.00	$ 400.00	$ -	$ -	$ -		$ -	$ -	$ -	$ -
Professional Services													
- Engineering, Planning and Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,000.00		$ -	$ -	$ -	$ -
- Other	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ -	$ -
Capital Expenditures													
- Storm Water Infrastructure	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ -	$ -
- Land Acquisition	$ -	$ -	$ -	$ -	$ -	$ -	$ -			$ -	$ -	$ -	$ -
- Capital Project Reserve	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ -	$ -
	$ 1,483	$ 1,049	$ 4,000	$ 1,074	$ 1,709	$ 6,682	$ 2,242	$ 1,000		$ 10,050	$ -	$ 212	$ -

Estimated Annual Storm Water Utility Budget (2007-2

Category	Public Information and Education	Illicit Discharge Ordinance Development	Construction Site Pollution Control Ordinance	Post Construction Site Stormwater Management Ordinance	Street Sweeping	Leaf Removal	Capital Improvement Projects	Current Program TOTALS
Annual Professional Hours								$ 312
Annual FT Hours					224.00	104.00		$ 539
Annual PT Hours								$ -
Annual Gallons Fuel								$ -
Personnel								
- Professional Salary, OT, and Benefits	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,050
- Full Time Salary, OT and Benefits	$ -	$ -	$ -	$ -	$ 4,737.60	$ 2,199.60	$ -	$ 11,400
- Seasonal/PT OT, Salary and Benefits	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,032
Materials and Supplies								
- Fuel	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 80
- Tools and Labor Related Equipment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 60
- Vehicle Maintenance Supplies	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
- Vehicle Reserve Fund	$ -	$ -	$ -	$ -	$ 7,740.00	$ 1,945.32	$ -	$ 16,401
Contractual Services								
- Construction Contracting	$ -	$ -	$ -	$ -	$ -	$ -	$ 40,000.00	$ 44,000
- Vehicle Maintenance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
- Printing		$ -	$ -	$ -	$ -	$ -	$ -	$ -
- Material Disposal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 500
- Other	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 600
								$ -
Professional Services								
- Engineering, Planning and Design	$ -				$ -	$ -	$ -	$ 1,000
- Other		$ -	$ -	$ -	$ -	$ -	$ -	$ -
Capital Expenditures								
- Storm Water Infrastructure	$ -	$ -	$ -	$ -	$ -	$ -		$ -
- Land Acquisition	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
- Capital Project Reserve	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ -	$ -	$ -	$ -	$ 12,478	$ 4,145	$ 40,000	**$ 86,123**

Estimated Annual Storm Water Utility Budget (2007-2012)

Category	Catch Basin Cleaning	Ditch Excavation	Pond Excavation	Curb and Gutter Repair	Outfall Repair	Mowing	Refuse Cleanup and Disposal	Stormwater Master Plan	System Map Updates	CIP Development and Maintenance	Site Plan and Project Plan Review	Enforcement Actions	Billing System/ Database Maintenance
Annual Professional Hours										312			
Annual FT Hours	56.00	10.00		33.00	32.00		72.00					8.00	520.00
Annual PT Hours													
Annual Gallons Fuel													
Personnel													
- Professional Salary, OT, and Benefits	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,049.52	$ -	$ -	$ -
- Full Time Salary, OT and Benefits	$ 1,184.40	$ 211.50	$ -	$ 697.95	$ 676.80	$ -	$ 1,522.80	$ -	$ -	$ -	$ -	$ 169.20	$ 10,998.00
- Seasonal/PT OT, Salary and Benefits	$ -	$ -	$ -	$ -	$ -	$ 2,032.32	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Materials and Supplies													
- Fuel	$ -	$ 80.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
- Tools and Labor Related Equipment	$ -	$ 60.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
- Vehicle Maintenance Supplies	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
- Vehicle Reserve Fund	$ 298.22	$ 197.65	$ -	$ 175.74	$ 632.49	$ 4,650.00	$ 718.87	$ -		$ -	$ -	$ 42.60	$ -
Contractual Services													
- Construction Contracting	$ -	$ -	$ 4,000.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
- Vehicle Maintenance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
- Printing	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
- Material Disposal	$ -	$ 500.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
- Other	$ -	$ -	$ -	$ 200.00	$ 400.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Professional Services													
- Engineering, Planning and Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,000.00	$ -	$ -	$ -	$ -	$ -
- Other	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,752.45	$ -	$ -	$ -	$ -
Capital Expenditures													
- Storm Water Infrastructure	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
- Land Acquisition	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ -	$ -	$ -
- Capital Project Reserve	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ 1,483	$ 1,049	$ 4,000	$ 1,074	$ 1,709	$ 6,682	$ 2,242	$ 1,000	$ 1,752	$ 10,050	$ -	$ 212	$ 10,998

Estimated Annual Storm Water Utility Budget (2007-2012)

Category	Public Information and Education	Illicit Discharge Ordinance Development	Construction Site Pollution Control Ordinance	Post Construction Site Stormwater Management Ordinance	Street Sweeping	Leaf Removal	Capital Improvement Projects	Current Program TOTALS
Annual Professional Hours	40							$ 352
Annual FT Hours					224.00	104.00		$ 1,059
Annual PT Hours								$ -
Annual Gallons Fuel								$ -
Personnel								
- Professional Salary, OT, and Benefits	$ 1,288.40	$ -	$ -	$ -	$ -	$ -	$ -	$ 11,338
- Full Time Salary, OT and Benefits	$ -	$ -	$ -	$ -	$ 4,737.60	$ 2,199.60	$ -	$ 22,398
- Seasonal/PT OT, Salary and Benefits	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,032
Materials and Supplies								
- Fuel	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 80
- Tools and Labor Related Equipment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 60
- Vehicle Maintenance Supplies	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
- Vehicle Reserve Fund	$ -	$ -	$ -	$ -	$ 7,740.00	$ 1,945.32	$ -	$ 16,401
Contractual Services								
- Construction Contracting	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,000
- Vehicle Maintenance	$ -	$ -	$ -	$ -	$ -	$ -	$ 50,000.00	$ 50,000
- Printing	$ 500.00	$ -	$ -	$ -	$ -	$ -	$ -	$ 500
- Material Disposal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 500
- Other	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 600
								$ -
Professional Services								
- Engineering, Planning and Design	$ -	$ 460.00	$ 460.00	$ 460.00	$ -	$ -	$ -	$ 2,380
- Other	$ 1,400.00	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,152
Capital Expenditures								
- Storm Water Infrastructure	$ -	$ -	$ -	$ -	$ -	$ -		$ -
- Land Acquisition	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
- Capital Project Reserve	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ 3,188	$ 460	$ 460	$ 460	$ 12,478	$ 4,145	$ 50,000	**$ 113,441**

City of Lodi Existing Stormwater Management Budget
Critical Assumptions (May 26, 2006)

Public Works Labor Costs (total)
2 FT staff @ $44,000 each (incl. benefits)
1 FT prof. Staff @ $67,000 (incl. benefits)
1 seasonal for 232 hours at $8.76/hr (mowing0
1 seasonal for 225 hours @ $18/hr

Storm Sewer Cleaning

Citywide storm sewer: 38,688 LF (7.33 miles)

Size	**LF**
6”	182
10”	774
12”	7347
15”	6817
18”	6800
24”	11,694
30”	2958
36”	1403
40”	351
48”	382
Total	38,668

Current program is jetting as needed

Sump Cleaning

- There are ____ inlets in the City
- Approximately 70% of City inlets have sumps
- The City cleans all sumps every 2 years; vactored and shoveled if necessary
- Labor: 3.5 FTE each for approx. 4 days
- A handful of sumps are also cleaned annually.
- See table for pro-rated value of ton truck

Manholes
- There are currently 82 manholes Citywide.

Roadside Ditch Excavations
- Ditches in industrial park cleaned every 5 years.
- Labor: 2 FTE for 2-3 days
- Supplies ~$1000
- See table for pro-rated value of spoil dirt disposal and tandem truck,

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Detention Pond/Other Excavation

- The City has 4 publicly maintained ponds (Quarry Basin , Pebble Stone, McCally and Sunrise, Industrial Park), plus a raingarden
- The school has several private ponds; the golf course may also have a private pond
- Assume 25-year life span and $25,000 maintenance per pond per lifespan

Inlet Inspection and Cleaning

- No current program, repairs performed on as needed basis

Inlet and Catch Basin Repair

- No current program, repairs performed on as needed basis

Curb and Gutter Repair

- See table for pro-rated value of ton truck

General Outfall Inspection and Maintenance

- No current program.

Outfall Repair

- There are 30 storm outfalls in the City of Lodi.
- Approximately 2 outfalls repaired each year
- See table for pro-rated value of spoil backhoe and tandem truck,

Rip Rap Bank Repair

- No current program

Mowing

- 1 seasonal person for 232 hours at $8.76/hr (100% to utility)
- See table for pro-rated value of loader tractor and weed mower,

Refuse Cleanup and Disposal

- After rainfall events (approx monthly)
- Labor (each month): 1 person, 6 hours
- See table for pro-rated value of chipper and ton truck,

Storm Sewer Televising

- As needed

Snow and Ice Control

- Not currently incorporated into stormwater management activities.

Storm Sewer Stenciling

- Decals installed at time of development

Street Sweeping

- There are 13 miles of streets in the City of Lodi, approx. 10% of which are downtown.
- Entire City swept once per month (sweep every Friday)
- Downtown swept weekly
- Future plan is to buy a new sweeper for $129,000; Randy estimates 15 year life-cycle with10% cost recovery
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Leaf Removal

- Currently residents sweep into street and swept up by street sweeper
- Future plan is to buy a leaf vaccum truck for $18,000; MSA estimates 15 year life-cycle with 10% cost recovery
- 1-2 hours per week public work staff time for leaf and grass clipping management

Pollution Prevention and Spill Response Program

- No current program

Stormwater Master Plan

- $10,000/10 year plan = $1000/year

System Map Updates

- GIS/GPS upgrade and update mapping $23,310 the to set up,
- $600 annually thereafter for maintenance, 1
- 1/3 total initial and ongoing costs allocated to stormwater
- Paid over 5 years = $1752 annually

CIP Development and Maintenance

- 15-20% of Randy's time.

Other Capital Projects

General Permit Activities

- No program

Grant Writing Assistance

- No program

Estimated Billing Database Maintenance

- No current program for stormwater related activity.
- Future annual expense is 25% of FTE

General Utility Management and Operation

- No program

Public Information and Education

- No current program
- Future annual program includes $500/yr printing costs, plus 40 hours professional staff time
- 2007 Program costs include $7000 for the production of an educational video

Public Involvement and Engagement

- No current program for stormwater related activity.

Site Plan and Project Review

- 2/yr charged back to developer

Site and Project Inspection

- Building inspector for residential construction; otherwise contractor responsible for self-policing

Enforcement Actions

- MSA assumes 1 project per year will require enforcement (8 hours).
- See table for pro-rated value of ton truck

Equipment

The equipment whose value is pro-rated and included in multiple program components is listed below, including total equipment value, and percent of time equipment is used for stormwater purposes

- Loader tractor — 15% of $200,000; 10- year life
- Chipper – 10% of $19,634; MSA estimates 15-year life (included in refuse disposal budget)
- Ton Truck – 20% of $45,000; MSA estimates 10-year life
- Backhoe – 20% of $30,000; MSA estimates 10- year life
- Skid Steer – 20% of $30,000; Estimated 12 –year life
- Spoil Dirt Disposal – 15% of $100,000; estimate 50- year life?
- Weed Mower – 75% of $22,000; Estimated 10- year life
- Tandem Truck - 20% of estimated 10- year life

Capital Improvements

- Approximately $15,000 per year for storm infrastructure for street projects
- $25,000 charged to utility for curb and gutter (50 percent of the $50,000 spent annually on curb and gutter associate with street project charged to utility)
- $10,000 per year MSA estimate for other storm improvement projects

Ordinances (Storm, Erosion, Illicit)

- $2,300 per ordinance, over 5 years = $460/year/ordinance